
8. Siren

Program Name: Siren.java

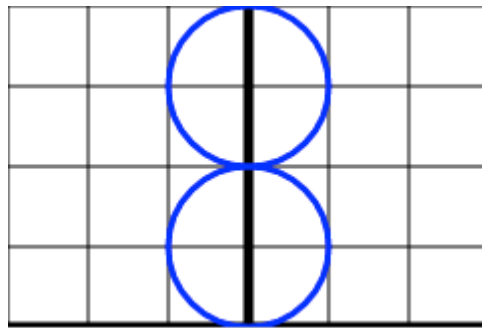
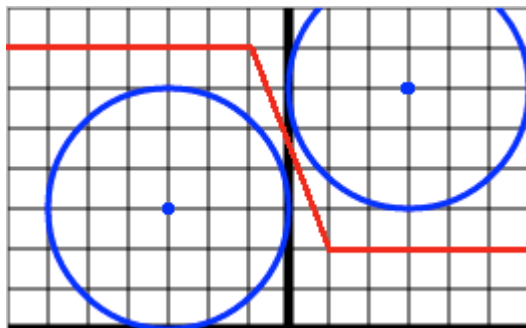
Input File: siren.dat

In ancient Greece, there were mythical creatures called Sirens that attracted sailors by singing, and caused them to shipwreck on their island. The Greek astronomer and mathematician Eratosthenes is sailing from one side of the sea to the other. He has predetermined the location of the island for each Siren, and the range of each of their songs so that he might be able to avoid them. If his ship passes in the range of an island of Sirens, he will become attracted and crash into their island. You must write a program that given the width of the sea and locations and ranges of the Sirens, determine whether Eratosthenes can reach the other side or not.

We will define the sea as a coordinate system. Let the width of the sea be W . The coordinate system is from negative infinity to infinity on the x axis, and 0 (top) to W (bottom) on the y axis. Sirens will always be on an island so their y axis will always be $1 \leq y \leq W-1$. Assume Eratosthenes starts at negative infinity and wants to move to positive infinity (at any y value). Each Siren is defined by an x value, y value, and radius.

Left: $W = 8$, Siren at $(-3, 3)$ with radius 3 and Siren at $(3, 6)$ with radius 3: A possible route for Eratosthenes is in red.

Right: $W = 4$, Siren at $(0, 1)$ with radius 1 and Siren at $(0, 3)$ with radius 1: No possible route for Eratosthenes.



Input

The first line will contain the number of test cases T .

The first line of each test case contains two integers: N and W , which are the number of Sirens on the map and the width of the sea.

The next N lines for each test case consist of each Siren, one per line, in the form of three integers $X Y R$, where X and Y are the coordinates as specified above, and R is the radius of the Siren's song.

Output

For each test case, output **YES** if Eratosthenes can make it from one side to the other safely, otherwise output **NO**.

Constraints

$1 \leq T \leq 10$

$0 \leq N \leq 30$, $0 \leq W \leq 200$

$-1000 \leq X \leq 1000$, $1 \leq Y \leq W-1$, $0 \leq R \leq W$

Example Input File

```
3
2 8
-3 3 3
3 6 3
2 4
0 1 1
0 3 1
3 14
-22 3 5
-10 4 8
7 7 7
```

Example Output to Screen

```
YES
NO
YES
```

Explanation of the example

In the first case, there is space between the two circles for Eratosthenes to move through without hearing either of the Siren's calls, so the answer is YES. In the second case, the Siren's circles touch, and span the entire width of the channel, so there is no possible way for Eratosthenes to make it to the other side, so the answer is NO. In the third sample, if you visually construct the graph, it is again clear there is a path to cross the sea.